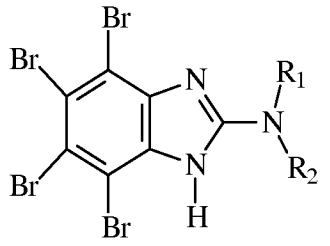
Amendments to the Claims:

1. (Currently amended) A ~~new~~ derivative of 4,5,6,7-tetrabromobenzimidazole of **Formula 1**



,

Formula 1

wherein

R_1 is a hydrogen or an aliphatic group; and

R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group.

2. (Previously presented) The derivative according to Claim 1, which is 2-methylamino-4,5,6,7-tetrabromo-1H-benzimidazole.

3. (Previously presented) The derivative according to Claim 1, which is 2-dimethylamino-4,5,6,7-tetrabromo-1H-benzimidazole.

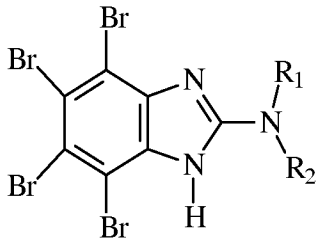
4. (Previously presented) The derivative according to Claim 1, which is 2-ethanolamino-4,5,6,7-tetrabromo-1H-benzimidazole.

5. (Previously presented) The derivative according to Claim 1, which is 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole.

6. (Previously presented) The derivative according to Claim 1, which is 2-(2-hydroxypropylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.

7. (Previously presented) The derivative according to Claim 1, which is 2-(2-dimethylaminoethylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.

8. (Currently amended) A method of preparation of a ~~new~~ derivative of 4,5,6,7-tetrabromobenzimidazole of Formula 1



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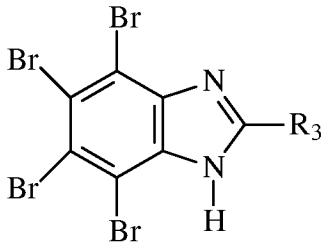
Formula 1

comprising

(a) reacting a compound of **Formula 2**



Formula 2

with an amine at an elevated temperature; and

(b) purifying the resulting product ~~is purified~~ by crystallization or silica gel chromatography

wherein

R_1 is a hydrogen or an aliphatic group;

R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group; and

R_3 is a halogen, an alkylthio, an alkoxy, a sulfone or an alkylsulfoxide.

9. (Previously presented) The method of Claim 8, wherein R_3 is selected from the group -Cl, -Br, CH_3S-, C_2H_5S-, C_3H_7S-, CH_3O, and C_2H_5O-.

10. (Currently amended) The method according to Claim 8 wherein said amine is a primary lower aliphatic amine.

11. (Previously presented) The method according to Claim 10 wherein said primary aliphatic amine includes in the aliphatic chain additionally hydroxyl groups or substituted amino groups.

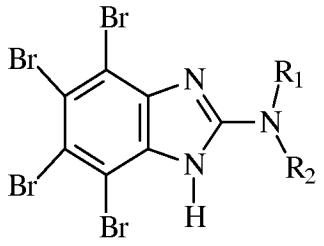
12. (Previously presented) The method according to Claim 8 wherein said amine is a secondary lower aliphatic amine.

13. (Previously presented) The method according to Claim 8 wherein said amine is used both as a reagent and as a co-solvent in an aqueous or alcoholic solution.

14. (Previously presented) The method according to Claim 8 wherein the reaction of said compound of Formula 2 with said amine is carried out at a temperature in the range between 80 to 140 °C.

15. (Cancelled)

16. (Currently amended) A pharmaceutical composition exhibiting ~~an anti-neoplastic activity~~ an anti-leukemic activity comprising a pharmaceutically-effective amount of a ~~new~~ derivative of 4,5,6,7-tetrabromobenzimidazole of **Formula 1**



Formula 1

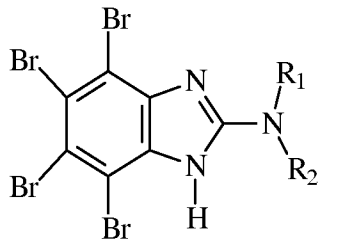
and at least one inert, pharmaceutically acceptable carrier or diluent wherein
R_1 is a hydrogen or an aliphatic group; and
R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group.

17. (Currently amended) The pharmaceutical composition of claim 16, wherein said ~~new~~ derivative of 4,5,6,7-tetrabromobenzimidazole of **Formula 1** is selected from the group consisting of 2-methylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-dimethylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-ethanolamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-(2-hydroxypropylamino)-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-(2-dimethylaminoethylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.

18. (Cancelled)

19. (Cancelled)

20. (Previously presented) A method of inhibiting caseine kinase 2 activity in a patient in the need of such treatment comprising administering to said patient a pharmaceutically-effective amount of the compound of **Formula 1**



,

Formula 1

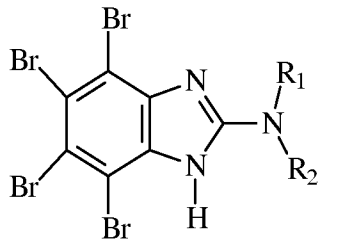
wherein

R_1 is a hydrogen or an aliphatic group; and

R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group.

21. (Currently amended) The method of ~~Claim 19~~ Claim 20, wherein said compound of **Formula 1** is selected from the group consisting of 2-methylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-dimethylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-ethanolamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-(2-hydroxypropylamino)-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-(2-dimethylaminoethylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.

22. (Previously presented) A method of treating human leukemia in a patient in the need of such treatment comprising administering to said patient a pharmaceutically-effective amount of the compound of **Formula 1**



,

Formula 1

wherein

R_1 is a hydrogen or an aliphatic group; and

R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group.

23. (Currently amended) The method of ~~Claim 21~~ Claim 22, wherein said compound of **Formula 1** is selected from the group consisting of 2-methylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-dimethylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-ethanolamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-(2-hydroxypropylamino)-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-(2-dimethylaminoethylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.